REMARKS/ARGUMENTS

In view of the foregoing amendments and the following remarks, the applicants respectfully submit that the pending claims comply with 35 U.S.C. § 112, comply with 35 U.S.C. § 101 and are not rendered obvious under 35 U.S.C. § 103. Accordingly, it is believed that this application is in condition for allowance. **If, however, the Examiner believes that there are any unresolved issues, or believes that some or all of the claims are not in condition for allowance, the applicants respectfully request that the Examiner contact the undersigned to schedule a telephone Examiner Interview before any further actions on the merits.**

The applicants will now address each of the issues raised in the outstanding Office Action.

Rejections under 35 U.S.C. § 112

Claims 25, 42 and 43 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite to particularly point out and distinctly claim the subject matter which the applicants regard as the invention. The applicants respectfully request that the Examiner reconsider and withdraw this ground of rejection in view of the following.

Claims 25, 42 and 43 have been amended to remove means-plus-function language and to include at least one processor and at least one storage device storing processor-executable instructions which, when executed by

the at least one processor, perform a method. This amendment is supported by, for example, Figure 10 and paragraphs [0060]-[0063] of the present application.

Rejections under 35 U.S.C. § 101

Claims 14, 16, 17, 19 and 24 are rejected under U.S.C. § 101 as being directed to non-statutory subject matter. The applicants respectfully request that the Examiner reconsider and withdraw this ground of rejection in view of the following.

In rejecting claim 14, the Examiner contends that claim 14 recites a data structure that is not in a manner so as to be executable by a computer/processor. Further, the Examiner contends that claim 14 recites a collection of fields, per se, which is not an actual data structure, instead being non-functional descriptive material. (See Examiner's Answer dated July 7, 2010, page 8.)

Claim 14 recites that each of the three fields is stored in association with a label-switched path. Accordingly, the claim recites "a physical or logical relationship among data elements, designed to support specific data manipulation functions," and not a mere collection of unrelated fields. Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility," OG Notices, (November 22, 2005).

In addition, the applicants respectfully note that the data structure need not be program instructions executable by a computer or a processor. Indeed, Guidelines of the US Patent Office state:

a claimed computer-readable medium

> encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory

"Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility," OG Notices, (November 22, 2005).

Furthermore, claim 14 clearly recites the functional utility provided by the data structure when processed by a forwarding device. Specifically, claim 14 recites in pertinent part:

> wherein a forwarding device, receiving the message, processes the message to (1) determine whether or not the forwarding device has a routing table entry that matches at least one of (A) the forwarding equivalency class information included in the second field, and (B) the host address or the host prefix included in the third field, and (2) use the label included in the first field for forwarding data only if the forwarding device determined that the forwarding device has a routing table entry that matches at least one of (A) the forwarding equivalency class information included in the second field, and (B) the host address or the host prefix included in the third field.

Thus, claim 14 recites a physical or logical relationship among data elements, designed to support specific data manipulation functions (i.e., functional descriptive material) stored on a machine-readable storage device. (Note that the exemplary storage devices

described in paragraph [0061] of the specification of the present application may be computer-readable.)

The applicants respectfully submit that claims 14, 16, 17, 19 and 24 recite statutory subject matter in view of the foregoing. (Claims 16, 17, 19 and 24 directly or indirectly depend from claim 14.) Consequently, the applicants respectfully request that the Examiner reconsider and withdraw this ground of rejection.

Rejections under 35 U.S.C. § 103

Claims 1-14, 16, 17, 19 and 24-48 are rejected under U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,965,592 ("the Tinsley patent") in view of U.S. Patent No. 7,151,775 ("the Renwick patent"). The applicants respectfully request that the Examiner reconsider and withdraw this ground of rejection in view of the following.

Claims 1-5, 11, 12, 25-29, 35, 36, 38-43 and 45, 46 and 48

Independent claims 1 and 25 are not rendered obvious by the Tinsley and Renwick patents because these patents, either taken alone or in combination, fail to teach or suggest acts of determining whether or not a message includes extended information, if the message does not include extended information, determining, using a first part of the message and routing information, whether or not to generate a further message to signal the label-switched path, and ***if the message does include extended***

information, determining, using a second part of the message and routing information, whether or not to generate a further message to signal the label-switched path. Further, one skilled in the art would not have been motivated to combine the Tinsley and Renwick patents as proposed by the Examiner.

In rejecting claims 1 and 25, the Examiner contends that the Tinsley patent teaches a method for establishing a label-switched path and using a first part of a message if the message does not include extended information, and using a second part of the message if the message includes extended information. (See Examiner's Answer dated July 7, 2010, pages 9 and 10.) Specifically, during a telephone interview with the Examiner conducted on January 8, 2008 (referred to as "the telephone interview"), the Examiner explained that he is interpreting the IPV6 header (602 of Figure 6(A) of the Tinsley patent) as the claimed "first part of a message" and the MPLS header (604 of Figure 6(A) of the Tinsley patent) as both the claimed "second part of a message" and the claimed "extended information". The applicants respectfully disagree with these characterizations.

The Tinsley patent describes distributing SS7 functions, previously performed centrally, using distributed gateway routing elements (DGREs). Figure 8 of the Tinsley patent illustrates routing (that is, forwarding) an outgoing SS7 message by a DGRE. Figure 9 of the Tinsley patent illustrates processing a received SS7 message. In both cases, a virtual interprocessor message transport (IMT) bus is used to communicate messages between DGREs. Multiprotocol label switching (MPLS) is described in columns 6 and 7 as a way of

ensuring quality of service (QoS) for communications between the DGREs. Thus, MPLS is described as one way of providing a virtual IMT bus with an appropriate QoS.

Note that the Tinsley patent does not concern receiving a message for ***establishing*** a label-switched path (LSP) as recited in claims 1 and 25. Although multiprotocol label switching (MPLS) can provide a label-switch path, the Tinsley patent is concerned with communications that might be facilitated by ***previously established*** MPLS-based label-switched paths. Further, although SS7 concerns call setup, call teardown and database access features, it does not concern establishing a ***label-switched path***.

Furthermore, packet 600 of Figure 6(A) of the Tinsley patent is for carrying data to be communicated (via the virtual IMT bus) among distributed SS7 DGREs. The IP header 602 and MPLS header 604 are simply used to ***forward*** the packets, preferably with an appropriate quality of service (QoS), and are not used to determine whether or not to generate a further message to signal a label-switched path.

The Examiner concedes that the Tinsley patent does not teach determining whether or not to generate a further message to signal the label-switched path. (See Examiner's Answer dated July 7, 2010, page 10.) However, the Examiner cites the Renwick patent as teaching this feature. The applicants respectfully disagree.

The Renwick patent concerns providing techniques for allocating multiple label-switched paths in a route that has multiple physical links using MPLS. The Renwick patent attempts to distribute traffic to relieve congestion while ensuring that the traffic of individual

flows is not routed over different paths. Although the Renwick patent concerns establishing label-switched paths, it does not ***determine whether to use a first part or a second part of a message to generate a further message for signaling the label-switched path depending on whether the message includes extended information.***

As can be appreciated from the foregoing, the Tinsley and Renwick patents neither teach, nor suggest, the acts and means recited in independent claims 1 and 25, respectively. Thus, the claims are not rendered obvious by the Tinsley and Renwick patents for at least this reason. Since claims 2-5, 11, 12, 38, 40, 41 and 45, 46 and 48 directly or indirectly depend from claim 1, and since claims 26-29, 35, 36, 39, 42 and 43 directly or indirectly depend from claim 25, these claims are similarly not rendered obvious by the Tinsley and Renwick patents.

Further, one skilled in the art would not have been motivated to combine these patents as proposed by the Examiner. As stated above, the Examiner concedes that the Tinsley patent does not teach determining whether or not to generate a further message to signal the label-switched path. (See Examiner's Answer dated July 7, 2010, page 10.) This is naturally the case since the Tinsley patent discusses using ***previously established*** MPLS paths, with quality of service (QoS) guarantees, thereby defining a virtual IMT bus to enable communications between distributed DGREs. (See, e.g., column 5, lines 14-25 and column 6, lines 56-59 of the Tinsley patent.) In the Tinsley patent, the IP header 602 and MPLS header 604 are part of a packet 600 used for

SS7 call signaling over an existing label-switched path. It is not used for establishing a label-switched path.

Since the Renwick patent concerns establishing multiple label-switched paths in a route that has multiple physical links using MPLS, one skilled in the art would not have been motivated to modify an aspect of the Tinsley patent that occurs ***after a label-switched path already exists*** in view of the Renwick patent. Even assuming, arguendo, that one skilled in the art were to combine the Tinsley and Renwick patents in their entirety, the results would be a distributed gateway of DGREs performing SS7 routing functions which establishes multiple label-switched paths over multiple physical links for ensuring QoS for communications between the DGREs. However, such a combination would differ from the claimed invention since the label-switched paths established for QoS purposes would not be established based on determining whether to use a first or second part of a message to generate a further message for signaling the label-switched path depending on whether the message includes extended information.

Thus, independent claims 1 and 25 are not rendered obvious by the Tinsley and Renwick patents for at least this additional reason. Since claims 2-13, 38, 40, 41 and 45-48 directly or indirectly depend from claim 1, and since claims 26-37, 39, 42 and 43 directly or indirectly depend from claim 25 these claims are similarly not rendered obvious by the Tinsley and Renwick patents.

Claims 14, 16, 17, 19 and 24

Independent claim 14 is not rendered obvious by the Tinsley and Renwick patents because these patents neither teach, nor suggest, a first field including a label stored in association with a label-switched path, a second field including forwarding equivalency class information stored in association with the label-switched path, and a third field including label-switched path signaling resolution information stored in association with the label-switched path, the label-switched path signaling resolution information including one of a host address and a host prefix, wherein a forwarding device, receiving the message, processes the message to (1) determine whether or not the forwarding device has a routing table entry that matches at least one of (A) the forwarding equivalency class information included in the second field, and (B) the host address or the host prefix included in the third field, and (2) use the label included in the first field for forwarding data only if the forwarding device determined that the forwarding device has a routing table entry that matches at least one of (A) the forwarding equivalency class information included in the second field, and (B) the host address or the host prefix included in the third field.

The Examiner applied the Tinsley and Renwick patents to claim 14. Although the IP packet 600 of Figure 6A of the Tinsley patent includes a label 610, it does not include a second field including forwarding equivalency class information stored in association with the label-switched path, and a third field including label-switched path signaling resolution information

stored in association with the label-switched path, the label-switched path signaling resolution information including one of a host address and a host prefix. Furthermore, the Renwick patent does not compensate for the deficiencies of the Tinsley patent because the Renwick patent also does not teach a third field including label-switched path signaling resolution information (which is different from the label stored in the first field and the FEC information stored in the second field) stored in association with the label-switched path, the label-switched path signaling resolution information including one of a host address and a host prefix.

Thus, independent claim 14 is not rendered obvious by the Tinsley and Renwick patents for at least the foregoing reason. Since claims 16, 17, 19 and 24 directly or indirectly depend from claim 14, these claims are similarly not rendered obvious by the Tinsley and Renwick patents.

Claim 44

In rejecting claim 44, the Examiner states that claim 44 is "rejected for the same reasons set forth to rejecting claims 1-6 above, since claim 44-48 do not teach or define any new or additional limitations than above claim 1-6." (See Examiner's Answer dated July 7, 2010, pages 16 and 17.) However, claim 44 was added in response to a statement made by the Examiner during the telephone interview suggesting that element (c) of claim 1 need not be given any weight if element (b) is always

met. That is, claim 1 may be interpreted by some to recite that the messages received for establishing a label-switched path never include extended information and thus are always processed normally while ignoring the other features of the claims.

Although the applicants do not agree with such an interpretation, claim 44 was added to avoid such an interpretation and explicitly recites receiving a first message which does not include extended information and the subsequent acts which take place upon receiving a message which does not include extended information, and receiving a second message which does include extended information and the subsequent acts which take place upon receiving a message which does include extended information.

Furthermore, as discussed above with reference to claims 1 and 25, during the telephone interview, the Examiner explained that he is interpreting the IPV6 header (602 of Figure 6(A) of the Tinsley patent) as the claimed "first part of a message" and the MPLS header (604 of Figure 6(A) of the Tinsley patent) as both the claimed "second part of a message" and the claimed "extended information". The applicants respectfully disagree with these characterizations.

The Tinsley patent describes distributing SS7 functions, previously performed centrally, using distributed gateway routing elements (DGREs). Figure 8 of the Tinsley patent illustrates routing (that is, forwarding) an outgoing SS7 message by a DGRE. Figure 9 of the Tinsley patent illustrates processing a received SS7 message. In both cases, a virtual interprocessor message transport (IMT) bus is used to communicate

messages between DGREs. MPLS is described in columns 6 and 7 as a way of ensuring quality of service ("QoS") for communications between the DGREs. Thus, MPLS is described as one way of providing a virtual IMT bus with an appropriate QoS.

Note that the Tinsley patent does not concern receiving a message for ***establishing*** a label-switched path (LSP) as recited in claim 44. Although multiprotocol label switching ("MPLS") can provide a label-switch path, the Tinsley patent is concerned with communications that might be facilitated by ***previously established*** MPLS-based label-switched paths. Further, although SS7 concerns call setup, call teardown and database access features, it does not concern establishing a ***label-switched path***.

In addition, packet 600 of Figure 6(A) of the Tinsley patent is for carrying data to be communicated (via the virtual IMT bus) among distributed SS7 DGREs. The IP header 602 and MPLS header 604 are simply used to ***forward*** the packets, preferably with an appropriate quality of service (QoS), and are not used to determine whether or not to generate a further message to signal a label-switched path.

The Examiner concedes that the Tinsley patent does not teach determining whether or not to generate a further message to signal the label-switched path. (See Examiner's Answer dated July 7, 2010, page 10.) However, the Examiner cites the Renwick patent as teaching this feature. The applicants respectfully disagree.

The Renwick patent concerns providing techniques for allocating multiple label-switched paths in a route that has multiple physical links using MPLS. The Renwick

patent attempts to distribute traffic to relieve congestion while ensuring that the traffic of individual flows is not routed over different paths. Although the Renwick patent concerns establishing label-switched paths, it does not ***determine whether to use a first part or a second part of a message to generate a further message for signaling the label-switched path depending on whether the message includes extended information.***

As can be appreciated from the foregoing, the Tinsley and Renwick patents neither teach, nor suggest, the acts recited in independent claim 44. Thus, claim 44 is not rendered obvious by the Tinsley and Renwick patents for at least this reason. Further, one skilled in the art would not have been motivated to combine these patents as proposed by the Examiner. As stated above, the Examiner concedes that the Tinsley patent does not teach determining whether or not to generate a further message to signal the label-switched path. (See Examiner's Answer dated July 7, 2010, page 10.) This is naturally the case since the Tinsley patent discusses using ***previously established*** MPLS paths, with quality of service (QoS) guarantees, thereby defining a virtual IMT bus to enable communications between distributed DGREs. (See, e.g., column 5, lines 14-25 and column 6, lines 56-59 of the Tinsley patent.) In the Tinsley patent, the IP header 602 and MPLS header 604 are part of a packet 600 used for SS7 call signaling over an existing label-switched path. It is not used for establishing a label-switched path.

Since the Renwick patent concerns establishing multiple label-switched paths in a route that has multiple physical links using MPLS, one skilled in the

art would not have been motivated to modify an aspect of the Tinsley patent that occurs after a label-switched path already exists in view of the Renwick patent. Even assuming, arguendo, that one skilled in the art were to combine the Tinsley and Renwick patents in their entirety, the results would be a distributed gateway of DGREs performing SS7 routing functions which establishes multiple label-switched paths over multiple physical links for ensuring QoS for communications between the DGREs. However, such a combination would differ from the claimed invention since the label-switched paths established for QoS purposes would not be established based on determining whether to use a first or second part of a message to generate a further message for signaling the label-switched path depending on whether the message includes extended information.

Thus, independent claim 44 is not rendered obvious by the Tinsley and Renwick patents for at least this reason.

Claims 6-8, 10, 30-32, 34 and 47

Dependent claims 6-8, 10 and 47 directly or indirectly depend from independent claim 1 and claims 30-32 and 34 directly or indirectly depend from independent claim 25. Therefore, these claims are not rendered obvious for at least the reasons discussed with respect to claims of 1 and 25 above. In addition, claims 6 and 30 further recite that the extended information includes ***resolution next hop information***, and claim 47 further recites that the second part of the message includes ***resolution next hop information***. In rejecting

claims 6, 30, and 47 the Examiner cites Figures 4-6 and column 5, line 57 through column 7, line 57 of the Tinsley patent. (See Examiner's Answer dated July 7, 2010, pages 11, 15 and 18.) The applicants respectfully disagree.

Resolution next hop ("RNH") information is described in the specification as follows:

> In one embodiment consistent with principles of the invention, a new type-length-value (TLV) data structure is defined as an extension to LDP messages. ***The new TLV, referred to as the "resolution next hop"*** (RNH) TLV, may be used in label mapping, label withdraw and/or label release messages. When the RNH TLV is present in a label withdraw message or release messages, the label TLV should be present as well.
>
> Figure 7 illustrates an exemplary message data structure 700, as well as an exemplary data structure for carrying RNH information. Specifically, exemplary message data structure 700 may include label information 710, FEC information 720 and RNH information 730.
>
> In an exemplary field format consistent with the principles of the invention, ***RNH information 730 may include a 14-bit field 736 including an RNH identifier. Two leading zeroes 732,734 may be used to instruct nodes what to do when they don't recognize field 736. Such a mechanism may be used to ensure correct interoperability between new nodes and old nodes. Specifically, a node may interpret the "00" such that, in the event that field 736 is unrecognized, message 700 is not forwarded, and a notification is sent to the sender. This behavior is defined in RFC 3036 (the U and F bits).***

> ***The RNH identifier in field 736 is a TLV type, and may be used by nodes, such as LSRs, to recognize the information 730 as RNH information. A 16-bit field 738 may include the length, in bytes of the value field of the TLV. In this case, the value field includes the address family field 740, the MBZ field 742 and the host address or prefix field 744. A 16-bit field 740 may carry address family information. Address family field 740 may contain a value from "Address Family Numbers" in RFC 1700 that encodes the address family for the address prefix in the Host Address (or Prefix) field. A must be zero (MBZ) field 742 may be used to align further fields at 4-byte boundaries. Field 744 may include a host address or prefix encoded according to address family field 740.*** [Emphasis added.]

(Paragraphs [0041]-[0043] of the present application) As can be appreciated from the foregoing, the resolution next hop information contains detailed information which may be used to advantageously permit LDP-signaled LSPs ***without requiring information about remote Autonomous Systems ("ASs")*** (e.g., FEC element prefixes or host addresses that are external to the IGP) to be injected into the local IGP. It is this detailed information which is analyzed to determine whether or nor to generate a further message to signal the label-switched path.

By contrast, the portion of the Tinsley patent cited by the Examiner does not describe that the IP header and MPLS header information in the Tinsley patent includes RNH information as described in the present application. More specifically, the information included in the IP header 602 and MPLS header 604 are simply used to ***forward***

packets, preferably with an appropriate quality of service (QoS), and are not used to determine whether or not to generate a further message to signal a label-switched path. The purported teachings of the Renwick patent fail to compensate for the aforementioned deficiencies of the Tinsley patent.

Thus, dependent claims 6, 30 and 47 are not rendered obvious by the Tinsley and Renwick patents for at least this additional reason. Since claims 7, 8 and 10 directly or indirectly depend from claim 6, and since claims 31, 32 and 34 directly or indirectly depend from claim 30, these claims are similarly not rendered obvious by the cited references.

Claims 9 and 33

Dependent claims 9 and 33 indirectly depend from independent claims 1 and 25, respectively. Therefore, these claims are not rendered obvious for at least the reasons discussed with respect to claims 1 and 25 above. In addition, dependent claims 9 and 33 indirectly depend from dependent claims 6 and 30, respectively. Therefore, these claims are not rendered obvious for at least the reasons discussed with respect to claims 1, 6, 25 and 30 above. Furthermore, claims 9 and 33 further recite that the second node is an ***autonomous system border router***. In rejecting claims 9 and 33, the Examiner cites Figures 1 and 2, column 2, lines 5-65, and column 4, line 59 through column 6, line 32 of the Renwick patent as teaching this feature. (See Examiner's Answer dated July 7, 2010, pages 11, 12 and 15.) The applicants respectfully disagree.

The portions of the Renwick patent cited by the Examiner describe ingress and egress routers used within ***a network*** 10 which "includes subnetworks 22 over which packets can be transferred en route from a source node 12 to a destination node 14." (Column 5, lines 6-8 of the Renwick patent) Thus, the entire network 10 in the Renwick patent appears to be a single autonomous system ("AS"). Thus, the ingress and egress nodes described in the Renwick patent are not autonomous system border routers since they appear to be functioning within a single autonomous system. The purported teachings of the Tinsley patent fail to compensate for the aforementioned deficiencies of the Renwick patent.

Thus, dependent claims 9 and 33 are not rendered obvious by the Tinsley and Renwick patents for at least this additional reason.

Claims 13 and 37

Dependent claims 13 and 37 indirectly depend from independent claims 1 and 25, respectively. Therefore, these claims are not rendered obvious for at least the reasons discussed with respect to claims 1 and 25 above. In addition, claim 13 further recites that the method is performed by a second node in a first network domain, and that the ingress node is in a second network domain. In rejecting claim 13 the Examiner cites Figures 1 and 2, column 1, lines 50-62, column 2, lines 5-65, column 3, lines 34-50 and column 4, line 59 through column 6, line 32 of the Renwick patent as teaching this feature. (See Examiner's Answer dated July 7, 2010, pages 12, 13 and 15) The applicants respectfully disagree.

The portions of the Renwick patent cited by the Examiner describe ingress and egress routers used within ***a network*** 10 which "includes subnetworks 22 over which packets can be transferred en route from a source node 12 to a destination node 14." (Column 5, lines 6-8 of the Renwick patent) As discussed above with respect to claim 9 and 33, the entire network 10 in the Renwick patent appears to be a single autonomous system ("AS") and within a single network domain. Thus, the ingress node does not appear to be in a second network domain. The purported teachings of the Tinsley patent fail to compensate for the aforementioned deficiencies of the Renwick patent.

Thus, dependent claim 13 is not rendered obvious by the Tinsley and Renwick patents for at least this additional reason. Corresponding apparatus claim 37 is similarly not rendered obvious by the cited references.

Conclusion

In view of the foregoing amendments and remarks, the applicant respectfully submits that the pending claims are in condition for allowance. Accordingly, the applicants request that the Examiner pass this application to issue.

Any arguments made in this amendment pertain ***only*** to the specific aspects of the invention ***claimed***. Any claim amendments or cancellations, and any arguments, are made ***without prejudice to, or disclaimer of***, the applicant's right to seek patent protection of any unclaimed (e.g., narrower, broader, different) subject matter, such as by

way of a continuation or divisional patent application for example.

Since the applicants' remarks, amendments, and/or filings with respect to the Examiner's objections and/or rejections are sufficient to overcome these objections and/or rejections, the applicants' silence as to assertions by the Examiner in the Office Action and/or to certain facts or conclusions that may be implied by objections and/or rejections in the Office Action (such as, for example, whether a reference constitutes prior art, whether references have been properly combined or modified, whether dependent claims are separately patentable, etc.) is not a concession by the applicants that such assertions and/or implications are accurate, and that all requirements for an objection and/or a rejection have been met. Thus, the applicants reserve the right to analyze and dispute any such assertions and implications in the future.

Respectfully submitted,

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